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NOTES ON THE BIRDS PECULIAR TO LAYSAN
ISLAND, HAWAIIAN GROUP.¹

BY WALTER K. FISHER.

Plates XII-XVI.

WE DO not naturally associate land birds with tiny coral atolls in tropical seas. It is therefore a strange fact that such a diminutive island as Laysan, and one so remote from continental shores, should harbor no less than five peculiar species: the Laysan Finch (*Telespiza cantans*) and Honey-eater (*Himatione freethi*), both 'drepanidid' birds, the Miller Bird (*Acrocephalus familiaris*), the Laysan Rail (*Porzana palmeri*), and lastly the Laysan Teal (*Anas laysanensis*). I use the term 'land birds' loosely, in contradistinction to sea-fowl, multitudes of which breed here throughout the year. The presence of these species is all the more remarkable because none appear on neighboring islands, more or less distant, some of which are very similar to Laysan in structure and flora.

Reaching out toward Japan from the main Hawaiian group is a long chain of volcanic rocks, atolls, sand-bars, and sunken reefs, all insignificant in size and widely separated. The last islet is fully two thousand miles from Honolulu and about half-way to Yokohama. Beginning at the east, the more important members of this chain are: Bird Island and Necker (tall volcanic rocks), French Frigate Shoals, Gardner Rock, Laysan, Lisiansky, Midway, Cure, and Morell. Laysan is eight hundred miles northwest-by-west from Honolulu, and is perhaps best known as being the home of countless albatrosses.

We sighted the island early one morning in May, lying low on the horizon, with a great cloud of sea-birds hovering over it. On all sides the air was lively with terns, albatrosses, and boobies,

¹ These notes were made during a visit of the Fish Commission steamer 'Albatross' to Laysan, May 17 to 23, 1902, and are abridged from a more extended report on the avifauna of the island, to appear in the Bulletin of the U. S. Fish Commission.

and we began to gain some notion of what a pandemonium the distant swarm was raising. We landed on the west side, where there is a narrow passage through the breakers, which curl with beautiful hues on the coral reef, and then sweep shoreward with flying foam.

Mr. Max Schlemmer, the superintendent, his two assistants, and a couple of dozen Japanese laborers constitute the human population. The phosphate rock is very valuable for manufacturing fertilizer, and is worked assiduously during the summer months. To Mr. Schlemmer the expedition owed much, for his unfailing courtesy and substantial aid very materially promoted the success of our week's visit.

Laysan is a slightly elevated atoll, rudely quadrilateral in contour, and suggests a shallow basin or platter. It is three miles long by one and one half broad. In the center is a wholly enclosed lagoon, covering perhaps one hundred acres. This is surrounded by a broad, level plain, that part nearest the very saline waters of the lagoon being destitute of any vegetable life. From this plain the land rises as a gentle sandy slope to a low divide or rim (about twenty-five feet above the water) near the sea beach. Not a tree breaks the monotonous expanse, but instead are low bushes (*Chenopodium sandwicheum*, *Santalum freycinetianum*, *Scævola kœnigi*) and broad areas of high, tussocky grass. On the narrow seaward slope the turf is short and wiry, and a broad band between the bare shores of the lagoon and the beginning of the bush-grass is covered mostly with matted beds of succulent *Portulaca lutea*, and reddish-flowered *Sesuvium portulacastrum*. Beautiful morning-glories, yellow *Tribulus* (remining one of *Potentilla*), showy *Capparis*, and numerous other flowers add a bit of color to the landscape.

Laysan is a bird paradise. Albatrosses (*Diomedea immutabilis* and *D. nigripes*) by the thousands rear their young here each year, free from fear of molestation or injury. More numerous even are the Sooty Terns (*Sterna fuliginosa*), while the Gray-back Tern (*S. lunata*), White Tern (*Gygis alba kittlitzi*), Noio (*Micranous hawaiiensis*), and Noddy (*Anous stolidus*) are all abundant. Attractive and interesting birds are the boobies, of which two species, *Sula cyanops* and *Sula piscator* are on the

island in large numbers. The droll Frigate Bird (*Fregata aquila*) is here in all the glory of his bright red gular 'balloon,' and the splendid Red-tailed Tropic Bird (*Phaëthon rubricaudus*) in satiny plumage of the palest rose pink, is a familiar member of the community; as he nervously flits by in the tropical sunshine his feathers glisten with the lustre of burnished metal. Among the Procellariidæ, the Bonin Petrels (*Æstrelata hypoleuca*) may be mentioned as exceeding even the Laysan Albatross in numbers, but as they live in deep burrows one would hardly think it. Next come the Wedge-tailed and Christmas Island Shearwaters (*Puffinus cuneatus* and *P. nativitatis*), which are abundant, and the rare Sooty Petrel (*Oceanodroma fuliginosa*) nests in some numbers during the winter months.

We were at once impressed by two striking facts: the great numbers of birds and their surprising tameness. Especially true is this of the sea-fowl. They seemed little put out by our presence and pursued their ordinary duties as if we were an essential part of the landscape. Even the land birds were fearless. While we sat working, not infrequently the little warbler, or Miller Bird, would perch on our table or chair backs, and the Laysan Rail and Finch would scurry about our feet in unobtrusive search for flies and bits of meat. Each day at meal-time the crimson Honey-eater flew into the room and hunted for millers. As we strolled over the island the Rails scampered hither and thither like tiny barnyard fowls, but soon returned, craning their necks to discover why they had so foolishly retreated. As for the sea-birds there was scarcely a species that seriously objected to our close approach, or at any rate departed when we attempted to photograph them. In fact the albatrosses were astonishingly fearless, and would sometimes walk up and examine some portion of our belongings, as if they had known us always.

It is far from my intention to speak of the sea-birds in detail but merely to sketch hastily, though perhaps inadequately, the conditions and creatures amid which the five peculiar land birds have presumably been evolved.



LAYSAN FINCH AND NEST.

LAYSAN FINCH. *Telespiza cantans* Wilson.

The Laysan 'Finch' is a stocky, independent creature about the size of a Black-headed Grosbeak, and its appearance strongly suggests one of the big-billed finches. The fully adult bird is a light rich yellow, greenish on the back, and a deep brownish on the wings and tail, the coverts and secondaries edged with yellowish, and this plumage is not assumed until the individual is over a year old, or perhaps not before the second season. The female is like the male but a trifle duller in tone. Both illustrations of Plate XII show the species in the subadult, brownish, streaked feathering, which it will be seen is worn through the first nesting season.

Telespiza and the next species considered, *Himatione freethi*, are placed in the Drepanididæ, a family peculiar to the Hawaiian Islands. The differences between these two birds seem great, and in fact about the only common character uniting the many diverse species into the composite family is the peculiar disagreeable musky scent said to emanate from birds in the flesh. I detected no such odor on either of the Laysan species, but it may have escaped me. The origin of the Drepanididæ remains still a sealed book, but their affinities seem to be American.

We much enjoyed the company of the Laysan Finch. He is a sociable, saucy and fearless fellow, and captivates one by his nonchalant, independent air. We could not walk anywhere without encountering them singly and in little companies—the latter being mostly males—diligently searching for food among the bushes or frolicking, toward the center of the island, in open stretches covered with portulaca and a pinkish flowered sesuvium. When disturbed they eye the intruder in an inquisitive, half-doubting manner, and utter their mellow, linnet-like call. If pursued they do not fly far, but escape by running along the ground, or suddenly crouching under a grass tussock. Not infrequently they hopped about the piazza where we were preparing specimens, and sought for food beneath the chairs. One day when I was alone and quite still, a handsome male alighted on a table at my elbow and proceeded to explore a large heap of loose papers. He was soon lost in the rustling pile, which he demolished with great energy in his search for novelties.

Telespiza is not particular as to its food, but is fond of the soft parts of grass stems, tender shoots of bushes, seeds, and especially of sea-fowl eggs. I once frightened a tern off her 'nest,' and almost immediately a pair of Finches flew to the egg. One of them cracked a neat hole in the shell with a few strokes of its powerful beak, and began to feed, although I was hastily adjusting a camera only a yard or two away. Nor did the removal of some rocks which obscured the view bother them greatly, for they merely hopped a few feet away and watched me calmly, resuming their repast as soon as I had finished. (Plate XIII, Fig. 1.) But suddenly a Rail rushed out of the grass, and with feathers erect made for the Finches in such a determined manner that the pair flew away and left *Porzanula* sole possessor. The latter lost no time in finishing the egg. (Plate XIII, Fig. 2.) Undoubtedly the finches eat a goodly number of eggs in the course of the season, for this was not the only case observed.

Their favorite nesting site is in the middle of a big tussock of grass, somewhat nearer the ground than *Himatione* and *Acrocephalus* usually build. *Chenopodium* bushes are also frequently used for we found nests here, as well as in grass clumps bordering the open near the lagoon — a location very popular with all the land birds. In each instance, in the latter case, the nest was wedged in the center of a tussock, well hidden by tall grass stems. It is constructed of handy materials, such as rootlets, twigs, and coarse grass, and the whole is rather loosely put together. The shallow cup, $2\frac{3}{4}$ inches in diameter, is lined with shredded grass. The position and character of the nest is shown in Plate XII.

There are three eggs in a complete set, although we found some nests with only two. A fairly typical specimen is bluntly ovate, of lustreless white, with small blotches and spots of light sepia and lilac gray, crowded toward the larger end, and very sparingly present on the acute half. Sometimes the spotting is distributed evenly over the whole surface. There is much variation in size and color. A typical example measures 24 by 18 millimeters.

The finches were so unsuspicious that I had little difficulty in securing photographs of them at the nest. The reader must remember that none of the various precautions usual in bird photography were here taken. The camera was within a few feet

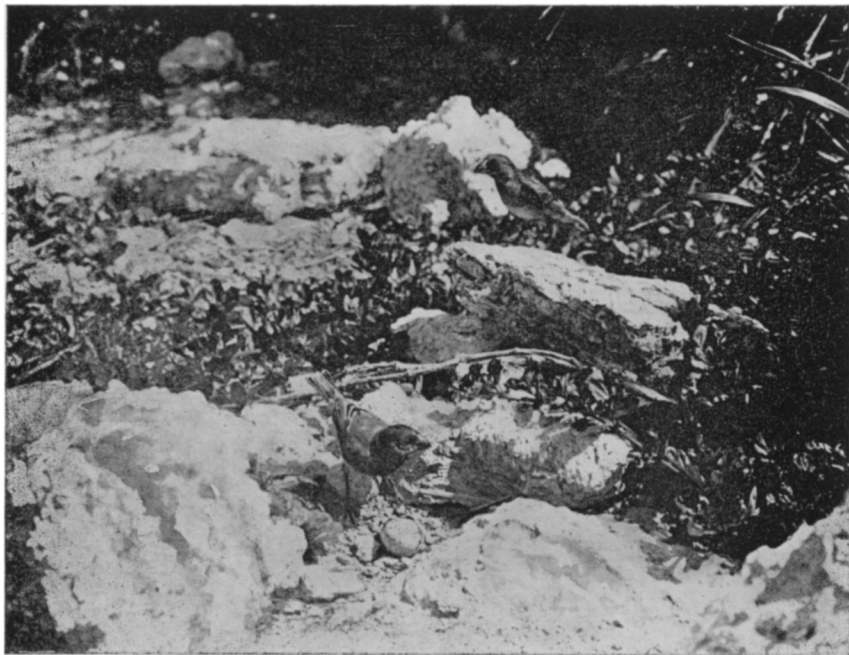


FIG. 1. LAYSAN FINCH EATING TERN'S EGG.



FIG. 2. LAYSAN RAIL EATING TERN'S EGG.

of the nest, in plain sight, and the operator was seated beside it waiting his chance. The bird in the pictures spent much of its time scratching sand, just behind the grass tussock, and would occasionally hop onto the edge of the nest to see what was happening.

LAYSAN HONEY-EATER. *Himatione freethi Rothschild.*

The Laysan Honey-eater is a brilliant little bird, about the size of a warbler, and very attractive when seen flitting here and there in the soft green of chenopodium bushes. Its plumage is of a lustrous scarlet vermilion, brightest on the crown, with wings, tail, and abdomen a dull sepia.

They are most abundant in the interior of the island near the open plain bordering the lagoon. Here on the extensive beds of succulent portulaca they may be seen throughout the day, busily walking about like pipits, either gathering insects or drinking honey from the numerous half-blown buds. The brush-like tongue of these creatures renders the gathering of honey, and such tiny insects as may infest the interior of corollas, an easy task. In fact it was no uncommon occurrence to see one go from flower to flower, and insert its bill between the petals of a nearly opened bud, with a certain precision and rapidity which suggested a hummingbird, except of course that the *Himatione* was on its feet.

I also observed them catching green caterpillars from *Chenopodium sandwicheum* bushes, the leaves of which resemble those of its well-known congener — our garden pig-weed. The Honey-eaters are partial to small brownish-gray moths or 'millers' which abound on the island. While we were at lunch, nearly every day a *Himatione* flew in and extracted these creatures from cracks between boards. It then grasped the miller with one foot, after the manner of a bird of prey, clinging with the other to the rough board wall, and ate the soft parts of its quarry. After a few moments the still fluttering victim was released, and the destructive search resumed. It became evident that the millers, relieved of important parts of their anatomy, did not thrive after such treatment. We heartily wished the little bird good luck, for the

millers left unpleasant memories, and likewise the imprint of their fuzz on many of my negatives.

The nest, like that of *Telespiza*, is built in grass tussocks, about two feet from the ground. The structure is loosely made, of fine grass and rootlets, and the dainty bowl is lined with rootlets and brown down from young Albatrosses (*Diomedea immutabilis*). There are no large white feathers in the lining, at once making the nest distinguishable from that of *Acrocephalus familiaris*, which builds in neighboring tussocks. The complete set seems to be four. The ovate egg is pure lustreless white, blotched and spotted at the large end with grayish vinaceous, and with fewer light and dark spots of Prout's brown. A typical specimen measures 18 by 13.75 millimeters.

Himatione freethi is closely related to the Apapane (*H. sanguinea*) of the larger Hawaiian Islands. The derivation of the two Laysan Drepanididæ is therefore rather plain, for although *Telespiza* is a monotypic genus, it belongs with the large-billed genera *Chloridops*, *Rhodacanthis*, and *Loxioides* of Hawaii, *Pseudonestor* of Maui, and *Psittacirostra* of Kauai, Oahu, Molokai, Lanai, and Hawaii.

MILLER BIRD. *Acrocephalus familiaris* (Rothschild).

The sociable little Miller Bird is one of the Reed Warblers belonging to the Sylviidæ, a characteristic Old World group, although a certain American genus, *Polioptila*, is also included in the family. It is curious that nowhere else in the whole Hawaiian group does any species of *Acrocephalus* occur. The genus is a wide ranging one, extending over the whole of the central and southern Palæarctic Region, having also representatives in Australia and South Africa, while one division of the group is exclusively Polynesian. Many of the species are highly migratory, and winter in the tropical regions of Asia and Africa, and in the islands of the Malay Archipelago. But the subgenus *Tartare*, or genus as some consider it, to which the Laysan bird belongs, is a distinctly Polynesian group. It is distributed over the islands between 30° north latitude and 30° south, and between longitude



FIG. 1. ACROCEPHALUS FAMILIARIS AND NEST.



FIG. 2. NEST OF ACROCEPHALUS FAMILIARIS.

120° or 125° east and 120° or 125° west. Oustalet¹ considers that this restricted group, *Tartare*, which has only eight oceanic species shows perhaps closer affinities with *Berniera* of Madagascar, than with the European and Asiatic *Acrocephalus* (*l. c.*, p. 210). *Tartare lusciniæ* is found on Guam and Saipan, *T. syrinx* in the Carolines and on Pagan of the Mariana Islands, *T. rehsei* on Pleasant Island, *T. æquinoctialis* on Christmas Island, *T. pistior* on the Fannings, *T. mendanæ* on the Marquesas, *T. longirostris* through the Society and Paumotu Archipelagos, and finally *T. familiaris* on Laysan. I am not aware with what species *familiaris* shows closest kin, but *à priori* one would rather favor the idea that the first colonists to Laysan came from the Carolines or the Ladrões (Mariana Islands) rather than from the south, for the reason that the genus is not present in the main Hawaiian group.

The Miller Bird is one of the most abundant of the species under consideration and is seen to best advantage during the cool of the morning or in late afternoon, for then it is very active, and at times musical. During the heated portion of the day, after the custom of our wood warblers, it retires to remain in seclusion among shady bushes, or tall tussocks of grass where its nest is made. Like most of the birds on the island *Acrocephalus* is rather unsuspicious, though not by any means so tame as either the Finches or Rails. I have read that its congeners in other parts of the world are quite shy, but many rules usual in bird manners seem here to be thrown aside. That the little creatures are far from nervous is demonstrated by the accompanying illustration (Plate XIV, Fig. 1). The camera was planted about thirty inches from the nest, and when everything was arranged I crouched under the instrument, and waited quietly for five minutes till the bird returned.

Whenever in evidence *Acrocephalus* always appears busy. It feeds largely on moths and other insects, and receives its local name from a fondness for millers, which, as already intimated, abound on the island. The little warbler drags these insects from their secluded hiding places with much skill. Its dull brownish-

¹ M. E. Oustalet, Les Mammifères et les Oiseaux des Isles Mariannes Nouvelles Archives du Museum, 3rd series, VII, 1895, 212.

olive plumage renders it inconspicuous, and one scarcely takes notice when it flies about the verandas, or into the dark corners of a room, searching for its favorite food. We often saw this species with *Himationes* gleaning insects in the broad purslane beds near the lagoon.

The nest is built usually in the midst of a big tussock of grass, and the birds seem to congregate along with the Finches and Honey-eaters near the open plain, several times mentioned in foregoing pages. We were puzzled to find many nests entirely completed, but without eggs, and finally concluded that the birds had not yet begun to lay in any numbers. Only two sets, one of three and the other (incomplete) of two, were taken. The nest is composed of dried grass stems and blades, fine rootlets, and is lined with rootlets, shredded grass and white albatross feathers, some of the last being woven into the coarser structure of the nest. These feathers are strictly characteristic of all the nests we found, so that the Miller Birds probably began very long ago to make use of this convenient material. None of the other birds use the large white feathers, although as already stated the *Himatione* employs soft albatross down. The eggs vary in ground color from the palest olive buff through greenish white to almost pure white. The markings consist of olive blotches and spots of various intensities, crowded at the blunt end, and likewise very tiny lines and specks, scattered over the whole egg. Sometimes there are drab shell marks. One egg was as small as 19 by 14 millimeters and another as large as 22 by 15.

LAYSAN RAIL. *Porzanula palmeri* *Frohawk.*

The Laysan Rail is a wide-awake, inquisitive little creature with a seemingly insatiable desire for first-hand knowledge. It is one of the most naïve, unsophisticated, and wholly unsuspicious birds in the whole avian catalogue. Usually it is confiding and familiar in its relations with man, yet sometimes holds aloof with a show of reserve. It will occasionally hide behind a bunch of grass, as if afraid, and then suddenly saunter forth with entire change of demeanor, and examine the intruder with critical care. One can



FIG. 1. LAYSAN RAIL ON NEST.



FIG. 2. NEST OF LAYSAN RAIL.

never tell just how he will be received by the next Rail. Often they scurry away as if pursued by a *bête noir*, but an insect will stop them in their mad career, and, having promptly disposed of this interruption, they seem to forget their former fright and walk about stretching their necks in a highly inquisitive manner. It is evident that they are incapable of pursuing any train of thought for more than an instant. Their ideas seem to flash by in kaleidoscopic succession, and within a minute they make as many false starts as a monkey. One can scarcely imagine more foolish and amusing little birds than these.

Porzanula palmeri is a very distinct form, and whence the original colonists came is rather difficult to conjecture. Just why these first birds never left the island, as the Golden Plovers do now, is also hard to say; unless, driven by strong winds they were so completely worn out and lost that they never dared to abandon the welcome land. The fact remains that they did not leave, and we now find a bird resembling *Porzana* in most respects, but with wings woefully useless and short. The *Porzana* type of coloring is present in a much lighter and bleached form.

The Rails are everywhere on the island in great numbers. There is scarcely a bunch of grass but harbors a pair. They probably have no serious enemies, so that the only check to their increase is space and food supply. It is possible Man-o'-war Birds may pick one up now and then, especially the chicks, but I saw nothing to substantiate this. Yet the Rails like to slink about in the shade of grass tussocks or bushes, much in the same way that a chipmunk seeks the shadow of a log in preference to crossing a bright sunny space. This trait suggested the idea that they might have winged enemies. However if necessity or even inclination calls, the Crakes show no aversion to coming out into the sunshine, especially for food, so that perhaps it is the hot sun which causes them to retire to cooler by-ways.

They spend a large part of their time creeping, mouse-like, in and out of nooks and crannies, as if trying to satisfy their genius for exploration. Old petrel burrows fallen in, low-bending bushes and grass tufts are searched with care and precision in this unending quest. As they walk their heads are thrust forward from side to side, the very pictures of inquisitive interest. They used some-

times to come up and peer at my shoes, with one foot poised in air. Scarcely a thing escapes their beady red eyes. The smallest spider or beetle is snapped up with as much avidity as a more conspicuous seed.

We caught all our specimens in an ordinary dip-net. Usually it was only necessary to place the net on the ground edgewise when presently a rail would make its appearance and proceed to examine the 'new phenomenon' at close range. Often they would fairly walk into the net, and Prof. J. O. Snyder obtained a photograph illustrating this amusing incident.

In strolling through the brush we could hear the Crakes calling here and there. Their song is a plaintive high-keyed little rattle which resembles remotely an alarm clock with a muffled bell, or pebbles ricocheting on a glass roof. I have observed them standing under bushes in the shade rattling away in this manner, with swollen throats and bills slightly opened. I once saw two approach one another, with feathers erect and heads lowered, and begin rattling in each others face. Then they suddenly ceased and slunk away in opposite directions.

At the house the little Rails walked about the veranda in search of food with far less fear than the chickens, and while Prof. Snyder and I were preparing specimens, not infrequently a Rail or two would be walking under our chairs, searching for morsels of meat. They took no notice of Albatrosses and other sea birds. I saw two in a lively serpentine chase about a young Gony's legs, the big creature appearing like an uncouth mammoth above the trim little Rails.

They do not seem to exhibit any desire to fly, probably having learned from experience that their wings are no longer to be relied upon. I have only seen them spread their wings when hopping up to a perch, or when running fast. I often chased them to see if they could rise from the ground, but they would not even try.

Their food consists of small insects, seeds, green material, and sea-birds' eggs. Their beaks are rather weak, and I doubt if they break any eggs except the thinner shelled ones of the terns. I did not myself see the Rail actually puncture an egg, but in Rothschild's "Avifauna of Laysan," the following note from Henry Palmer's diary is of interest.

"While out this morning both my assistant and I saw a little Rail break and eat an egg. We had disturbed from its nest a Noddy (Anous); immediately the Rail ran up and began to strike at the egg shell with its bill, but the egg being large and hard, he was quite a long time before making a hole. The Rail would jump high into the air, and come down with all its force on the egg, until it accomplished the task, which once done the egg was soon emptied. By this time the Tern came back and gave chase, but in vain." (*L. c.*, pt. I, p. x.)

Porzanulas lurk about the outskirts of tern colonies all the time, and I once had to frighten a Crake from the nest of a Tropic Bird, while attempting to photograph the egg. I also saw a Rail rush at some Telespizas and drive them from a tern's egg, upon which they were feeding, as related in the account of the Finch. The Rail then set to and finished the repast, dragging the embryo about in an ineffectual attempt to swallow it. With such habits it is difficult to see how these creatures can ever seriously be at a loss to find food.

The following episode illustrates, I think, very forcibly the fearlessness of these Rails. While photographing a nest, I propped back the mass of sedge stems which obscured it. The camera was only a few feet away, and during the adjusting of apparatus, the Rail crept onto the eggs and energetically began to cover herself with the soft lining. After photographing her several times, I lifted her off, and moved the camera still closer, but almost at once she slipped back again, and settled down contentedly. Then, with the focusing cloth I persuaded her to retire to the tall grass, near at hand. I ran back to the camera, but on turning perceived my rail skipping across the flattened grasses in hot pursuit, and I was able to make only a hasty inspection of the ground-glass before she had settled on the nest again. It was under these circumstances that Plate XV, figure 2, was secured. Figure 1 of the same plate shows the Rail.

The Rails make their nests either in the midst of thick tussocks of tall grass, near the ground, or else in close-matted clumps of a juncus-like sedge, which grows in a narrow band along the outermost edge of the lagoon-plain, just where the area of bushy grass and brush begins. We had only to walk over the tangled beds of

this sedge, and watch where the Rails ran out, when a nest could easily be found. It is placed on the ground at the end of a little tunnel, about five or six inches long, and is a roundish cavity, lined above and on all sides, except the little entrance way, with soft dried stems. The eggs are deposited in a little bowl-shaped hollow about four inches in diameter (Pl. XV, Fig. 2). We found several sets of threes and a few incomplete sets of twos. The eggs are large in proportion to the bird, a typical specimen measuring 31 by 21 millimeters, and in contour they are bluntly ovate or elliptical ovate. The ground color is a pale olive buff, closely and rather evenly spotted with pale clay color, or raw sienna, and faint lilac gray. The clay color is brightest and predominates. All the eggs collected were fresh. The young apparently begin to hatch about the middle of June.

LAYSAN TEAL. *Anas laysanensis* Rothschild.

That an islet, scarcely three miles in its longest dimension and fully three thousand miles from continental shores, should harbor a peculiar species of the genus *Anas*, is, to say the least, surprising. The birds themselves are scarcely less peculiar than their distribution. Most of us picture ducks as among the wariest of wild-fowl, but the Laysan Teal, though not exactly tame, are at any rate quite unsophisticated.

I have little to record concerning their habits. They congregate about a small sedge-bordered, brackish-water pond near the south end of the lagoon. Here we saw them each day, sunning themselves, and preening their feathers on a little heap of rocks near the center of the pond. We saw them also waddling about in other parts of the island, but not commonly. Near the house there was a pair which probably had a nest in the vicinity, for one of them used to come up to the house after nightfall, and walk about like a barn-yard fowl. Mr. Schlemmer said it was searching for millers. Although these ducks can fly perfectly well, they ordinarily did not take wing until approached within a few rods, and then never went far. They much preferred to walk about, which they did in twos and threes, gleaning their food as they



FIG. 1. NEST OF LAYSAN TEAL.



FIG. 2. YOUNG OF LAYSAN TEAL.

proceeded. The stomach of a male collected near the pond was gorged with small flies, resembling the common house-fly. We did not observe any Teal near the ocean and it is probable they never voluntarily take to salt water.

We discovered one nest within a couple of rods of the pond, placed under a thick chenopodium bush. Six eggs of the palest green — almost white — rested in a shallow bowl constructed of long dry sedges. I wished if possible to secure a picture of the female, so I photographed the eggs (Pl. XVI, Fig. 1) and left them till the following morning. But when I returned to the nest, three of the eggs had hatched, one young was half out, and another egg picked. In taking the accompanying photograph (Pl. XVI, Fig. 2), one of the ducklings had to be removed in order to show the others. The type egg was preserved in alcohol. It measures 55 by 38 millimeters, and in contour is a blunt ovate.

A few days later Prof. Snyder saw three old birds with broods, one of which took to the pond. I also saw a baby swimming about, the rest of the family being somewhere in the sedge tangle. These young resemble those of Mallards.

The Teal is the least common of the five species just considered, and although I had no accurate method of estimating I would place the total number of ducks considerably below one hundred. It will be an ill day for all the birds on Laysan, if a cat, pig, or mon-goose is ever allowed to land. Any or all of these creatures would make short work of eggs and young birds, and could break up what is probably the most interesting community of sea-fowl in the world.